

## Claims

1                   1.       An image projection device capable of hovering and flying having at least  
2 one buoyant body (1), projector (2), and projection surface (3), wherein the shape and volume of  
3 the buoyant body (1) are configured such that the buoyancy that it is capable of generating  
4 provides stable locations of the projector (2) and projection surface (3), which are mutually  
5 remotely arranged at a separation corresponding to the projection range, the projector (2) is  
6 arranged essentially outside a first outer surface (4) of the buoyant body (1), the projection  
7 surface (3) essentially coincides with a second outer surface (5) of the buoyant body (1) that is  
8 situated across from the first outer surface (4) and is essentially planar when in use, and the  
9 buoyant body (1) has a buoyancy-free section (6) situated between the projector (2) and the  
10 projection surface (3) that does not significantly affect the path (7) of the beam transiting the  
11 space (8) between the projector (2) and the projection surface (3).

1                   2.       A device according to claim 1, wherein the shape of the buoyancy-free  
2 section (6) situated in the space (8) between the projector (2) and the projection surface (3) is  
3 configured in the form of an inverted pyramid, in particular, corresponds to that of a cone.

1                   3.       A device according to claim 2, wherein the buoyant body (1) consists of a  
2 single component and is configured such that it essentially has a cubical shape.

1                   4.       A device according to claim 1, wherein the buoyant body (1) consists of  
2 two, essentially identical, partial bodies (11, 12), where those partial bodies (11, 12) are  
3 arranged, one above the other, along the buoyancy axis (9) such that they compensate for a  
4 nonuniform weight distribution, in the sense of maintaining a stable orientation.

1                   5.       A device according to claim 4, wherein each of the partial bodies (11, 12)  
2 has an essentially wedge-shaped profile.

1                   6.       A device according to claim 4 or claim 5, wherein the two, in particular,  
2 wedge-shaped, partial bodies (11, 12) are joined together such that shape of the outer surface of  
3 the resultant assembly essentially corresponds to that of a cube.

1           7.       A device according to any of the foregoing claims, wherein the buoyant  
2 body (1) is assembled from chambers that, if necessary, are sealed off from one another, and that  
3 may have differing dimensions in order to obtain the desired, final, external shape.

1           8.       An image projection device capable of hovering and flying having at least  
2 one buoyant body (1), projector (2), and projection surface (3), wherein the volume of the  
3 buoyant body (1) is configured such that the buoyancy that it is capable of generating allows  
4 stable locations of the projector (2) and projection surface (3), which are mutually remotely  
5 arranged at a separation corresponding to the projection range, the projector (2) is arranged  
6 essentially outside a first outer surface (4) of the buoyant body (1), the projection surface (3) is  
7 essentially planar when in use, the projection surface (3) is arranged in the vicinity of a second  
8 outer surface (5) that is situated essentially across from the first outer surface (4) of the buoyant  
9 body (1), and the projection surface (3) is fastened to the buoyant body (1), as a separate  
10 component thereof.

1           9.       A device according to claim 8, wherein the buoyant body (1) has a  
2 spherical shape and the projection surface (3) has a shape approximating that of a segment of a  
3 sphere that is fastened in place within the sphere, as a separate component thereof, and is situated  
4 in the beam path (7), across from the projector (2).

1           10.      A device according to claim 9, wherein the buoyant body (1) is configured  
2 such that it is transparent over that section (5') thereof that, when viewed from outside, is  
3 situated in front of the projection surface (3).

1           11.      A device according to claim 8, wherein the buoyant body (1) is configured  
2 in the form of a cylinder (16), the projector (2) is situated essentially outside a planar surface (4')  
3 of the cylinder (16) and the projection surface (3) is mounted in the beam path (7), across from  
4 the projector (2), in the vicinity (5) of the second, planar surface (5') of the cylinder (16), which  
5 is essentially parallel to the first, as a separate component thereof.

1           12.     A device according to claim 11, wherein the projection surface (3) is  
2     incorporated into the associated, essentially planar, outer surface (5') of the buoyant body (1), as  
3     a separate component thereof.

1           13.     A device according to claim 11 or claim 12, wherein the buoyant body (1)  
2     is configured such that it is transparent over that section (5') thereof that, when viewed from  
3     outside, is situated in front of the projection surface (3).

1           14.     A device according to claim 11 or claim 12, wherein the projection surface  
2     (3) forms the entire second, planar surface (5') of the cylinder (16), or a portion thereof.

1           15.     A device according to any of claims 11 - 14, wherein the cylindrical  
2     buoyant body (1) is configured in the form of a right circular cylinder (16), or an oblique circular  
3     cylinder.

1           16.     A device according to any of claims 11 - 15, wherein the projection  
2     surface (3) is welded in place inside the buoyant body (1).

1           17.     A device according to any of the foregoing claims, wherein the buoyant  
2     body (1) is held floating in place by flexible lines (13).

1           18.     A device according to any of the foregoing claims, wherein controllable  
2     driving devices, in particular, driving devices that are controllable by a remote controller, are  
3     provided on the buoyant body (1).

1           19.     A device according to any of the foregoing claims, wherein the device is  
2     wholly incorporated into an aircraft, in particular, a blimp or dirigible (71).

1           20.     A device according to claim 19, wherein the aircraft has preferably been  
2     designed for operation inside a building, and preferably is maneuverable by remote control.